

To: Rao, Kate[Rao.kate@epa.gov]; Mogharabi, Nahal[MOGHARABI.NAHAL@EPA.GOV]
Cc: Montgomery, Michael[Montgomery.Michael@epa.gov]; Keener, Bill[Keener.Bill@epa.gov]
From: Albright, David
Sent: Tue 9/22/2015 9:57:47 PM
Subject: FW: UIC Follow Up questions--Bakersfield Californian

Draft written responses to Mr. Cox's three questions.....

1. EPA informally received two discussion documents from DOGGR in late 2011 regarding area of review (AOR) approaches for Class II permitting. EPA was informed that one of the documents was developed by WSPA and the other document was developed by State personnel. These documents were not presented to EPA for formal SDWA consideration, nor described as official approaches that the State was planning to implement. Given the informal nature of these discussion papers, EPA did not formally respond to either document.
2. Cyclic steam injection wells are a type of enhanced oil recovery well that uses alternating phases of steam injection and oil production from the same well. Cyclic steam wells inject into hydrocarbon-bearing formations to recover oil that is very viscous. The steam is used to heat the oil to make it flow more freely into the wellbore, then the oil is brought to the surface. There are several thousand cyclic steam wells in CA and they are regulated by the CA Division of Oil, Gas, and Geothermal Resources (DOGGR) as Class II Underground Injection Control (UIC) wells. From discussion with DOGGR, EPA understands that some cyclic steam wells inject fluids above fracture pressure. EPA's UIC regulations stipulate that injection into Class II wells may not initiate new fractures or propagate existing fractures in the confining zone adjacent to USDWs [40 CFR part 146.23(a)(1)], however, the regulations do not prohibit injection into Class II wells above fracture pressure within the injection/production zone.
3. The UIC program protects groundwater aquifers containing total dissolved solids (TDS) levels of 10,000 ppm or less. Such aquifers are defined by the UIC regulations as "underground sources of drinking water." When implementing the Class II UIC program, the state of CA is required to protect aquifers with TDS levels of 10,000 ppm or less.

Let me know if you have questions about these responses.

Thanks,
David

From: Mogharabi, Nahal
Sent: Monday, September 21, 2015 4:51 PM
To: Rao, Kate; Albright, David; Montgomery, Michael

Cc: Keener, Bill

Subject: UIC Follow Up questions--Bakersfield Californian

Hello,

John Cox from the Bakersfield Californian called to follow up on his previous questions as well as some additional questions. He said

1. Was EPA asked whether the SDWA covers the plans that were proposed in 2011 and what was EPA's response.
2. He wants to speak to someone about Cyclic Steaming and UIC Class II wells. As he understands it cyclic steaming requires no injecting under the frack gradient. So is it then intentionally done above the frack gradient? Under what authority does it work?
3. Does CA have the authority to set 10,000 vs. 3,000 levels.?

Let's figure out tomorrow how we want to respond. He wants to speak to someone, so I'm not sure how we want to proceed.

Thanks!

Nahal

Nahal Mogharabi

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